

DOCUMENT RESUME

ED 081 078

EA 005 299

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 TITLE Maiden Erlegh: An English Secondary School Development Project. Programme on Educational Building 2..
 INSTITUTION Organisation for Economic Cooperation and Development, Paris (France).
 PUB DATE May 73
 NOTE 22p.; A related document is EA 005 300. Photographs and charts may reproduce poorly
 AVAILABLE FROM Miss L. Gibson, Principal Administrator, Programme on Educational Building Secretariat, 2 rue Andre Pascal, 75775 Paris Cedex 16, France (Free)
 EDRS PRICE MF-\$0.65 HC-\$3.29
 DESCRIPTORS *Comprehensive Programs; Educational Objectives; Flexible Facilities; Information Dissemination; Modular Building Design; *School Buildings; *School Design; *School Expansion; School Planning; *Secondary Schools
 IDENTIFIERS England

ABSTRACT

The second in a series of leaflets designed for the dissemination of information on school building, this publication describes the activities of the Development Group of the Department of Education and Science in identifying changes in, studying design implications for, and suggesting solutions to the space problems of, a secondary school in England. The group, consisting of architects, educationists, and other experts, assumed responsibility for the expansion of the school by acting as architects on the design and construction of the building for client local education authorities. The project described here should result in enlarging the school to 1,200 places for students aged 11 - 16, of which 240 places will be for those over 16. The design solution divides the school into eight "Centres" and the school library. Common characteristics of the centres are explained, and a floor plan of the Centre for Humanities illustrates how these ideas have been expressed in practice.

(Author/MLF)

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PROGRAMME ON EDUCATIONAL BUILDING

MAIDEN ERLEGH

An English Secondary School
Development Project

BY CLIVE BOOTH

EA 005 299

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

PARIS MAY 1973

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MAIDEN ERLIGH

AN ENGLISH SECONDARY SCHOOL DEVELOPMENT PROJECT

leaflet
by

CLIVE BOOTH, Principal

at the

Architects and Building Branch,
Department of Education and Science,
London.

This leaflet is about a school building project being undertaken by the Development Group of the Department of Education and Science, London. The Development Group exists to identify changes taking place in schools, to study the implications for design and to suggest solutions. It is hoped in a later information leaflet to discuss the operation and organisation of the Development Group and its links with other bodies. For the purpose of this leaflet it is enough to note that the Development Group consists of architects, educationists, and other experts, and that they demonstrate their approach not in purely theoretical studies but by acting as architects on the design and construction of educational buildings for client local education authorities.

BACKGROUND

During the 1960s an increasing number of English local authorities decided to replace the bipartite system of "grammar" and "modern" secondary schools by a system of comprehensive schools catering for all abilities (see Figures 1a and 1b). Hitherto most secondary schools ranged in size from 300-600 places. But such schools were considered rather small for all the varied facilities needed for the complete range of ability and the requirements of a developing curriculum. For this reason many local authorities chose to meet the need for new secondary school places by expanding their existing small schools.

Thus, much secondary school building since the 1960s has been in the form of extensions to existing premises and schools catering for 900 or more pupils became increasingly common.

In response to the growing interest among local authorities in expanding existing secondary school buildings and establishing comprehensive schools in them, the Development Group conducted a series of case studies subsequently published in 1968 in Building Bulletin* 40, Comprehensive Schools from Existing Buildings.

*A series published by Her Majesty's Stationery Office (H.M.S.O.) illustrating the work of the Development Group.

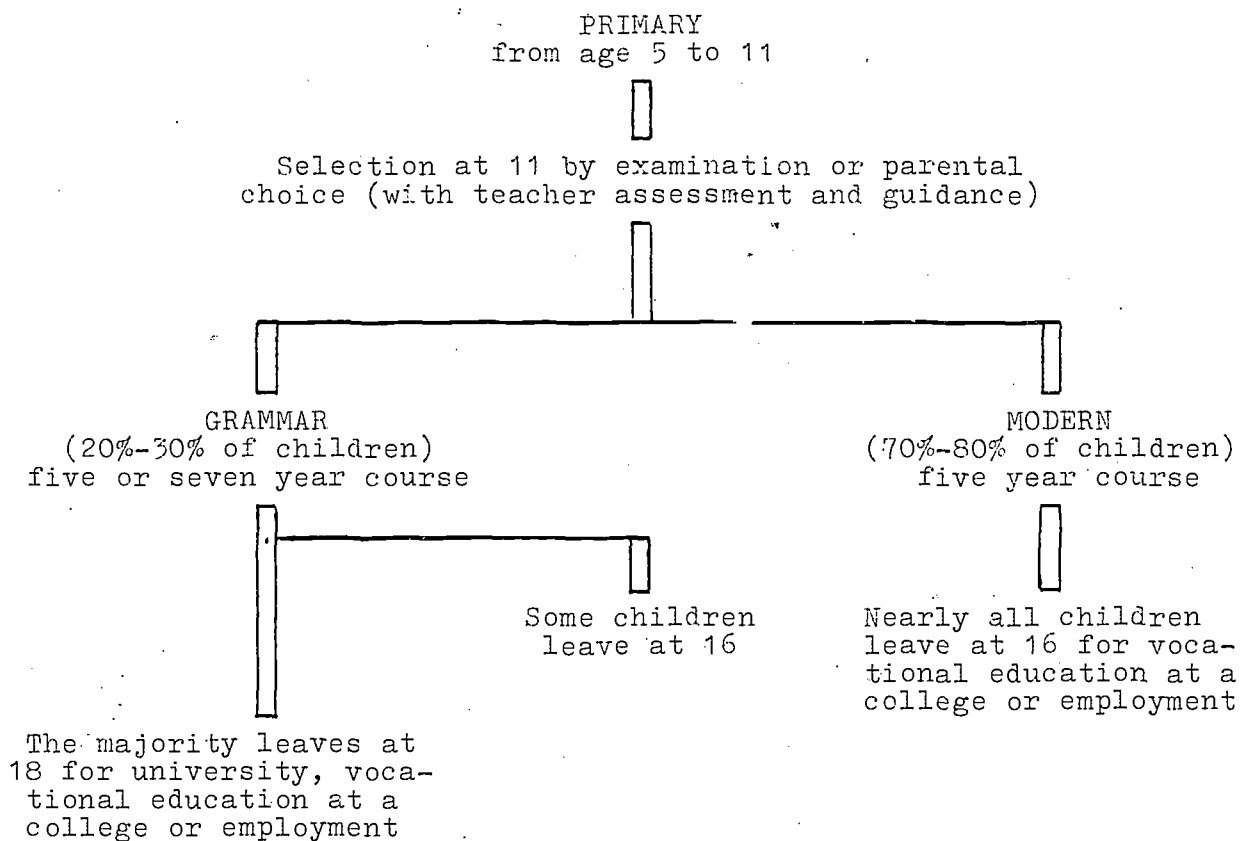


Figure 1a : Bipartite System - This diagram shows the usual pattern of the bipartite system, but local variations occur.

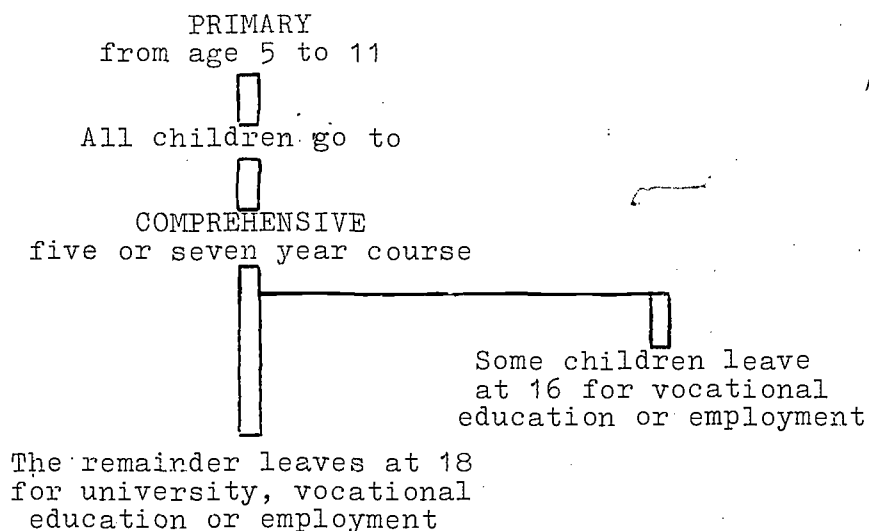


Figure 1b : Comprehensive System - Other forms of comprehensive school organisation exist, but this is the commonest and the one which applies at Maiden Erlegh.

THE MAIDEN ERLEGH SCHOOL

As a complementary exercise permitting a more detailed approach than had been possible in the case studies of Building Bulletin 40, the Development Group assumed responsibility in 1967 for the design of extensions at a particular school, the Maiden Erlegh secondary school, near Reading, Berkshire. It is about fifty kilometres west of London (see Figure 2) and the client was the local education authority, Berkshire County Council. Building started in March 1971; some accommodation to be occupied in January 1973, the remainder in September 1973.

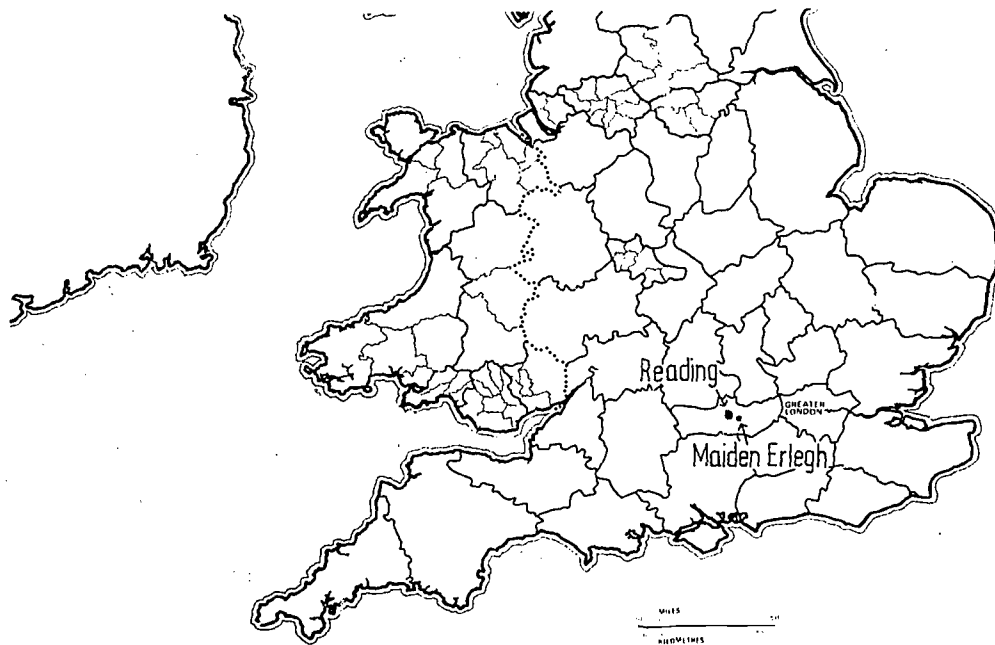


Figure 2 : Maiden Erlegh in relation to Southern England

The existing buildings were a mixture of permanent and temporary accommodation and the school was organised as a secondary modern school. The original buildings were completed in 1961 and accommodated almost 450 pupils. However, since then the local population has increased on account of new housing developments and by 1971 the school contained 840 pupils. The additional 390 pupils were mainly accommodated in temporary buildings, although a "fifth form centre" for pupils aged 15 was built in 1967.

THE NEW PROJECT

The project undertaken by the Development Group will enlarge the school to 1,200 places for boys and girls aged 11-16, with 240 places for those over 16, and the new school will be a comprehensive school. The temporary buildings will be removed. The gross cost of the building (excluding land) is £604,000 including £36,000 for remodeling the existing building. The gross floor area of the school, including a small public library (109m²), is 10,960m², of which 3,730m² is in the existing building. The new building is in the Method system of rationalised traditional building sponsored by a group of eight local authorities. The public library, a youth club and adult education facilities which were housed in the existing building are all being expanded. A teachers' centre was established in a temporary building and will have a permanent place in the enlarged school. Such a centre is a meeting place where teachers from schools in an area can gather to discuss new methods, cooperate in curriculum research, receive in-service training, and prepare teaching materials. An informal social/discussion area and space for practical work are often provided.

At first the local parish council, an elected body representing the 12,000 people living in the village of Earley and surrounding area expressed interest in contributing to the cost of the school to make it more useful to the general community. They proposed to finance an enlargement of the indoor and outdoor playing facilities (including extra changing-room space), floodlighting for a football pitch, enlarged music, drama, arts and craft areas and a committee room, at a cost of £45,000. However, a poll of the local community failed to obtain the necessary support for this idea. Nevertheless, accommodation in the new school will be available for local clubs and societies to hire when it is not needed for educational purposes.

THE INVESTIGATION PERIOD

In a development project, one of the most crucial stages occurs before the team has begun to think in detail about the design of the project itself. There is a period of intensive activity when visits are

organised to schools where interesting developments are taking place, so that current practices and new trends can be observed and discussed with teachers, pupils, architects and administrators.

During the investigation period for the Maiden Erlegh project the team was impressed by the evidence of experiment and innovation taking place in the schools it visited. Individual teachers and groups of teachers are making more and more use of their freedom over matters of school organisation, teaching method and curriculum. In this context, the Schools Council (a national body with teacher and local education authority representation independent of the central government) has had an important influence. So too have universities and pedagogical colleges. The challenge for architects is to design buildings which will not only cater for the best current practice but will also be capable of accepting continual change.

Two important observations to emerge from the investigation period were the desire of schools generally to provide a wide range of study options and the growth in inter-disciplinary studies through cooperation between traditionally isolated subjects. All this demands variety in accommodation as well as flexibility in school organisation.

Discussions with teachers in the existing Maiden Erlegh school were significant in the investigation period, and their use of the existing accommodation was observed. The fifth form centre (see Figure 3) was designed by Berkshire County Architect and incorporated ideas produced in an earlier Development Group exercise.* It provided a base for 120 pupils, accommodating perhaps two-thirds of them at a time. Here, pupils generally work individually or in small groups on topics often chosen by themselves, such as the history of the village, local industry, market research or local government affairs. Although intended primarily for 15 year-old pupils, the Centre has been used successfully with younger age groups and is popular with teachers and pupils alike. The atmosphere is relaxed and informal and has

*See, for example : Building Bulletin 32, Additions for the Fifth Form

enabled teachers and pupils to establish a closer, more effective relationship. Also, it has encouraged cooperative working among teachers. The Centre exerted a strong influence on the planning of the new accommodation.

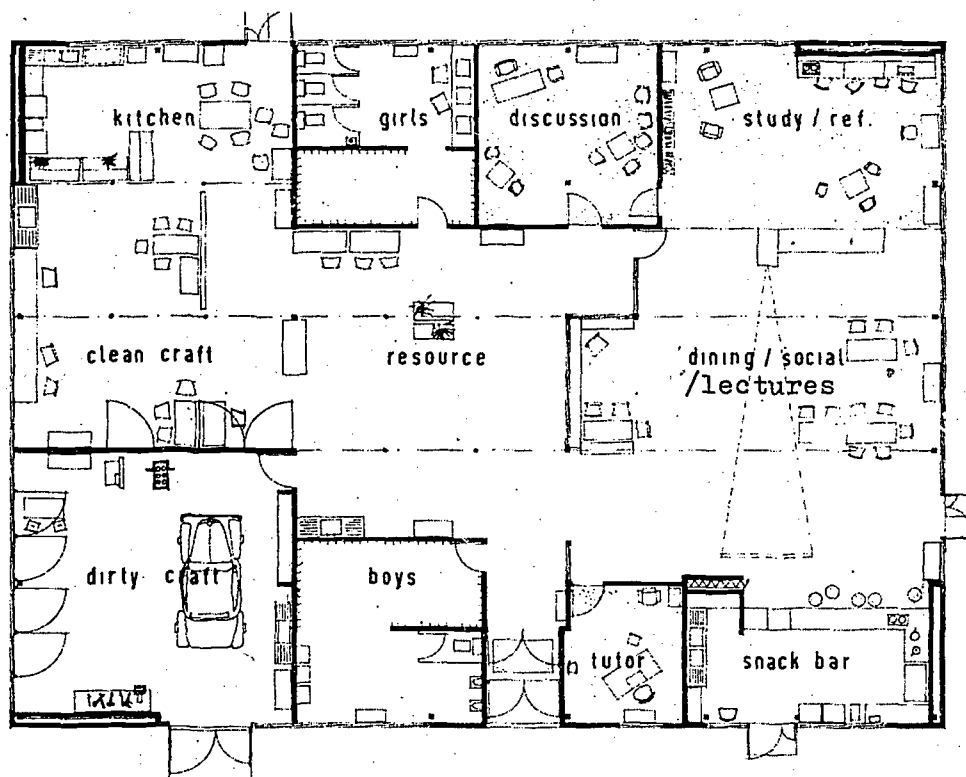


Figure 3 : Fifth Form Centre

BRIEF

The brief to emerge from the investigation period and discussions with the client local authority contained several key aims, including these:

a) Accommodation for 11 and 12 year-olds

The planning of this accommodation was to allow for the progressive development of the learning methods practised in the primary schools from which the 11 year-olds had come. It would be a physically separate "lower-school" in which 11 and 12 year-olds might spend about half their time. For part of their time in certain activities

(arts, crafts, home economics, languages, music and physical education) they would go to other parts of the school.

b) Deployment of teaching space

Contacts between traditionally separate but related subjects (for example biology and nutritional aspects of home economics, or science and technology) should be encouraged, and spaces should be available for sharing among subjects. Practical and theoretical work should be more closely related.

c) Teaching organisation

As well as forming conventional groups of about 15 and 30 pupils, teachers should have the option of working together with perhaps 80 or 120 pupils in time blocks of up to half a day. Within this large group there could be many groups of varying size engaged in a variety of activities related to a common theme.

d) Books, teaching materials and audio-visual aids

Small collections of books, teaching materials and audio-visual aids would be integrated with the teaching areas, and would be under the ultimate control of the qualified librarian in charge of the central school library.

e) Pastoral care

In the English educational system, teachers have traditionally taken an interest not only in the educational performance but also in the general well-being of their pupils. Thus the practice has developed of giving certain teachers "pastoral" responsibility for a group of children. Usually the children will meet their "pastoral" teacher once a day and a child in difficulty for any reason can turn to him for help and advice. To meet this need, there are places in the school where pupils can find and be found by the teachers responsible for their pastoral care. Here too there is storage space for personal possessions. In general, the places used for pastoral care are also used for teaching purposes. Pupils in the first two years (aged 11 and 12) will have their pastoral base in the Lower School. For older pupils, the building contains a variety of places suitable for pastoral care.

f) Senior pupils' social/study base

Pupils in the 5th, 6th and 7th years (aged 15-18) would have their own distinctively designed area for social use and private study.

g) Staff accommodation

Each small group of staff would have their own work room close to their teaching areas. The work rooms would not cater for staff from one department but from several disciplines. There would also be a central social area where staff could go to relax and meet teachers from other parts of the school.

h) Evening and weekend use

Many kinds of educational, social and recreational activities will continue to take place in the school, and many areas should therefore be available for evening as well as daytime use. For example, part of the base mentioned in f) above will be used as a youth club in the evening, and the staff social area becomes an adult club room [see g)] open to all adults using the buildings.

i) Staggered day

For some time the school has operated a "staggered day" with older pupils starting and finishing later than younger ones. It is convenient not to have the whole school arriving and leaving at exactly the same time, and the school accommodation can also be used rather more intensively. Also, the older pupils tend to stay behind after formal school hours for club activities or to study or pursue interests and hobbies. An important advantage of the staggered day is that the break for lunch can be spread over a longer period, thus enabling the designers to reduce the area needed for dining.

DESIGN

The design solution divides the school into eight "Centres" and the school library. To prevent any of the new buildings being too overpowering and to create spaces between the buildings with a human scale, the maximum ground floor area for any centre was restricted to 1,000m² and the number of storeys to two. Within each Centre there is a group of related subjects which are capable of sharing certain common facilities. Each Centre can also support a variety of

activities, for example practical and theoretical work, formal teaching and more informally organised but carefully planned project work. The Centres are:

	<u>Work places</u>	<u>Pastoral places</u>
1. Lower School		
English/Drama	80	
Science	29	
Mathematics	66	
History, Religious Education, Geography	92	
Library	8	
Total	275	480
Average number of pupils	240	
2. Centre for English and Languages		
English	59	
Languages	142	
Library	8	
Private study	14	
Total	223	260
Average number of pupils	193	
3. Centre for Humanities		
History, Geography, Religious Education, Philosophy, Economics and Social Sciences	175	
English	16	
Mathematics and Commerce	33	
Private study	10	
Library	8	
Total	242	220
Average number of pupils	212	
4. Centre for Science, Home Economics, Arts and Crafts		
Science	133	
Home Economics	69	
Crafts	59	
Art/Crafts	52	
Private study	10	
Library	8	
Total	331	40
Average number of pupils	262	

	<u>Work places</u>	<u>Pastoral places</u>
5. Centre for Science, Mathematics and Technology		
Science	108	
Crafts and Technology	31	
Mathematics	84	
Private study	14	
Library	8	
Total	245	40
Average number of pupils	200	
6. Centre for Drama, Arts and Music		
Drama	29	
English	33	
Music	73	
Art and Craft	24	
Needlework and Design	21	
Reference	12	
Total	192	80
Average number of pupils	158	
7. Fifteen-plus Club and Study Commons		
Private study	30	320
Youth Club and Social Area	-	
8. Centre for Physical Education		
Indoors	84	
Outdoors (average number of pupils)	67	
9. Library		
Study places for first, second, third and fourth years (11-15 year-olds)	40	
Study places for fifth, sixth and seventh years (15-18 year-olds)	30	

Some subjects appear in more than one Centre; for example English in 1, 2, 3 and 6; and crafts in 4, 5 and 6. This is a consequence of aim b) of the brief and reflects the complex inter-relationship between subjects.

The number of work places for each subject was derived from the average number of pupils likely to be working in each subject at any

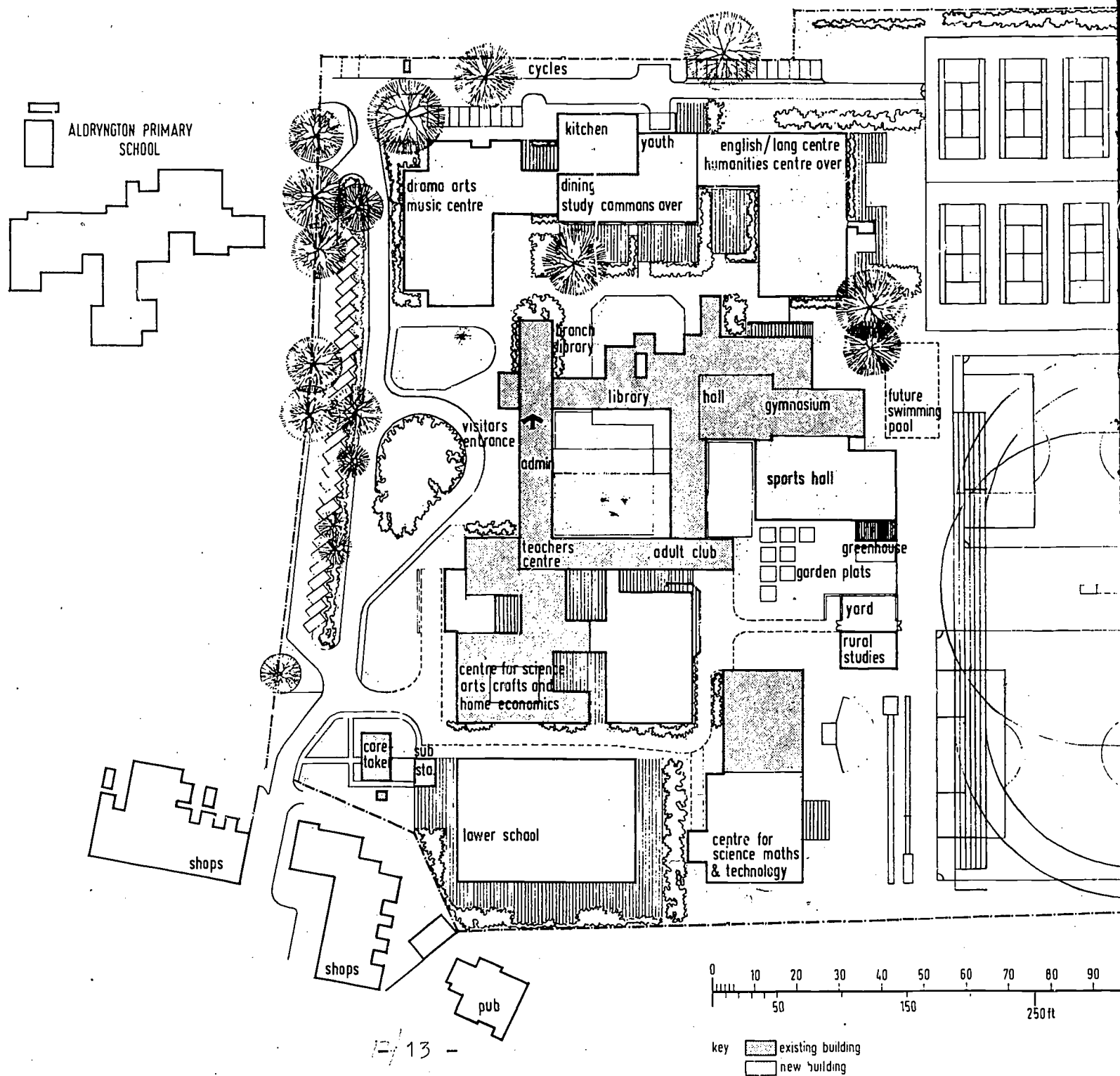
one time after a range of possible curricula and the time to be spent on its various aspects had been agreed. A teaching area was then calculated for each type of work place. The distribution of work places and thus the area of each centre was determined by educational and organisational decisions on the subjects to be included in each centre. It is important to notice that the number of work places provided in a Centre exceeds the average number of pupils working there by between 15% and 25%. This is an essential working margin because, firstly, the distribution of work places can never exactly match the varying sizes of groups which will use the accommodation from hour to hour, day to day, and year to year; and secondly, because pupils involved in project work will need to move to and fro between one type of work place (e.g. practical area) and another (e.g. reference area) within a short space of time. For example, members of a group of pupils in the Humanities Centre working on local history may be simultaneously building a model, writing about it, looking up reference books, and preparing a photographic display.

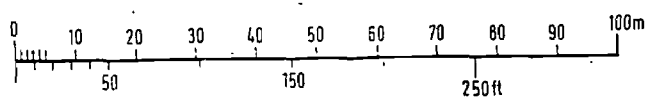
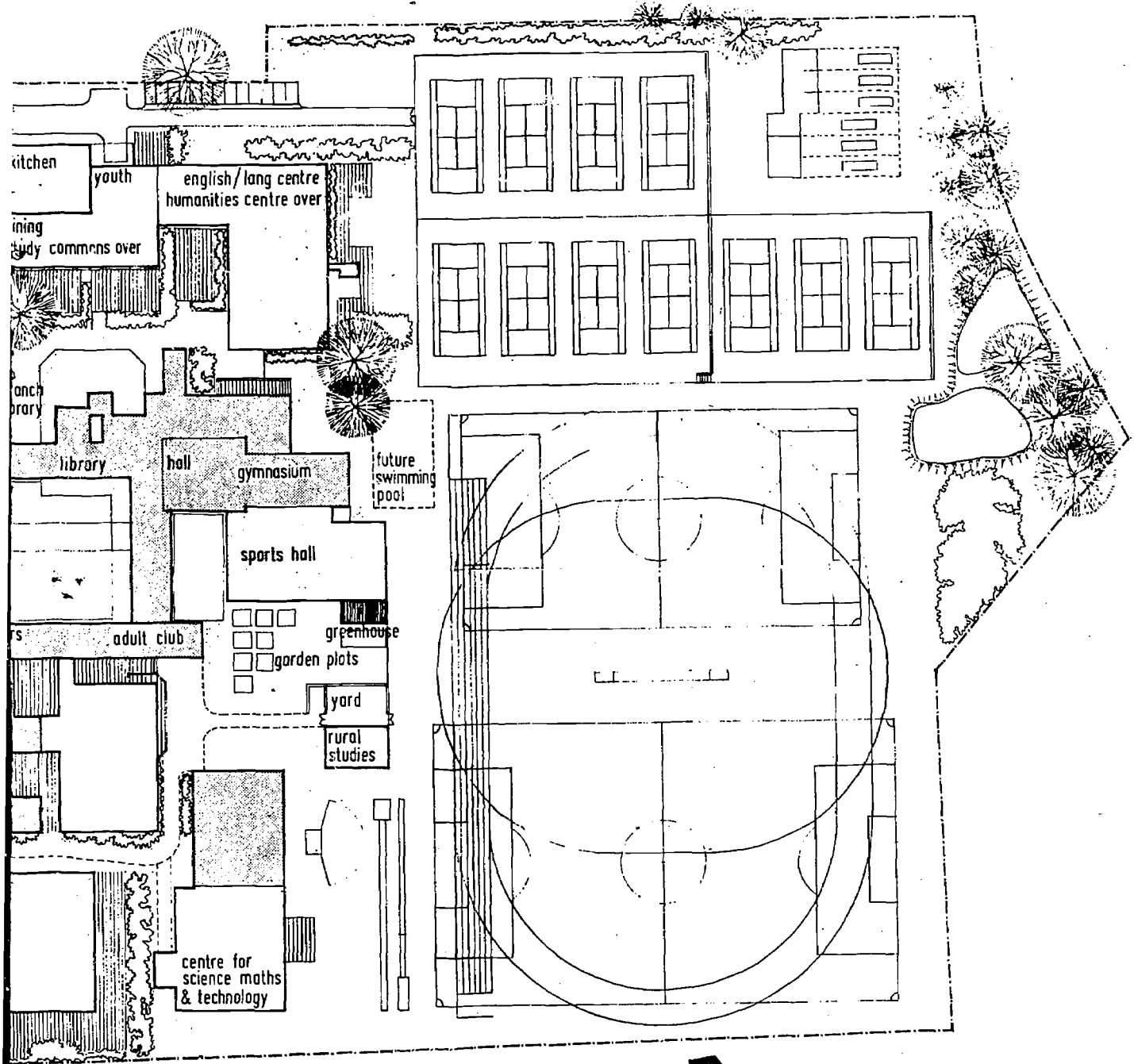
Not all the accommodation is in Centres. The old main building contains the school and public libraries, centre for careers advice, medical inspection suite, administrative offices, teachers' centre and staff social area/adult club room. (See Figure 4)

Each Centre has four distinct types of space:

1. Permanently fixed areas - staircases, lavatories and rooms needing special acoustics treatment such as lecture theatres.
2. Enclosed rooms requiring good sound insulation, which may be reorganised in the long term without major structural alteration, say every 5-10 years. (Mullions are at 0.9m intervals). They are situated on the perimeter of the building and there are four distinct types:
 - a) rooms suitable either for a tutorial group of 6-8 pupils or for senior teachers, who would use it both as an office and tutorial room;
 - b) seminar rooms suitable for groups of 12-18 pupils;
 - c) group rooms suitable for 22-30 pupils;
 - d) work rooms for the staff based in the Centre (varying from 6-14 in number).

Figure 4 :
Block Plan
of School





key existing building
 new building

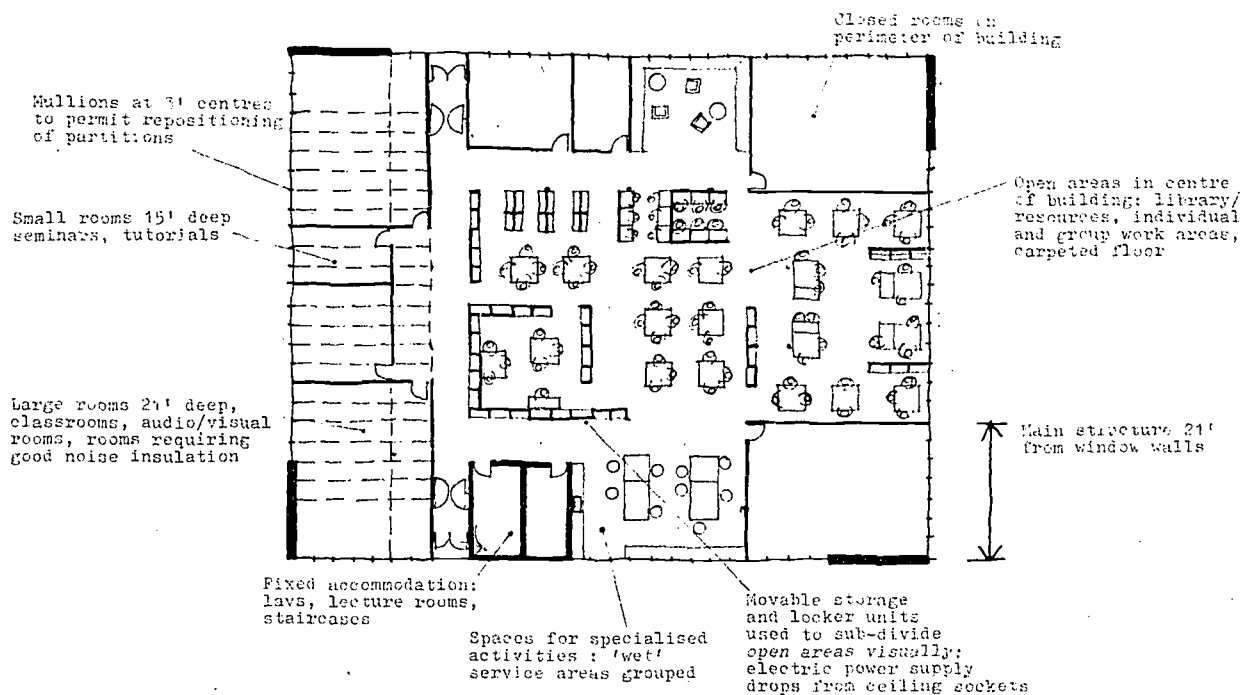


Figure 5 : Conceptual Centre

3. General work space - carpeted zones sub-divided by storage furniture units into: library reference areas, individual study areas, areas where groups of varying size could work together on a project, and informally furnished social areas (also available for teaching).

4. Spaces for specialised activities with appropriate services (water supply, electricity and so on) equipment and furniture.

Together these four types of space (see Figure 5) are intended to provide three forms of flexibility: firstly, the general work areas will support a considerable variety of organisations within the course of one day: secondly, the storage units sub-dividing the general work areas can be moved perhaps every 2 or 3 months (but they are heavy when full): thirdly, the repositioning of the partitions forming the enclosed rooms could take place in the long term, as already mentioned.

CENTRE FOR HUMANITIES

The Centre for Humanities illustrates how these ideas have been expressed in practice (see Figure 6). Pupils in the third and

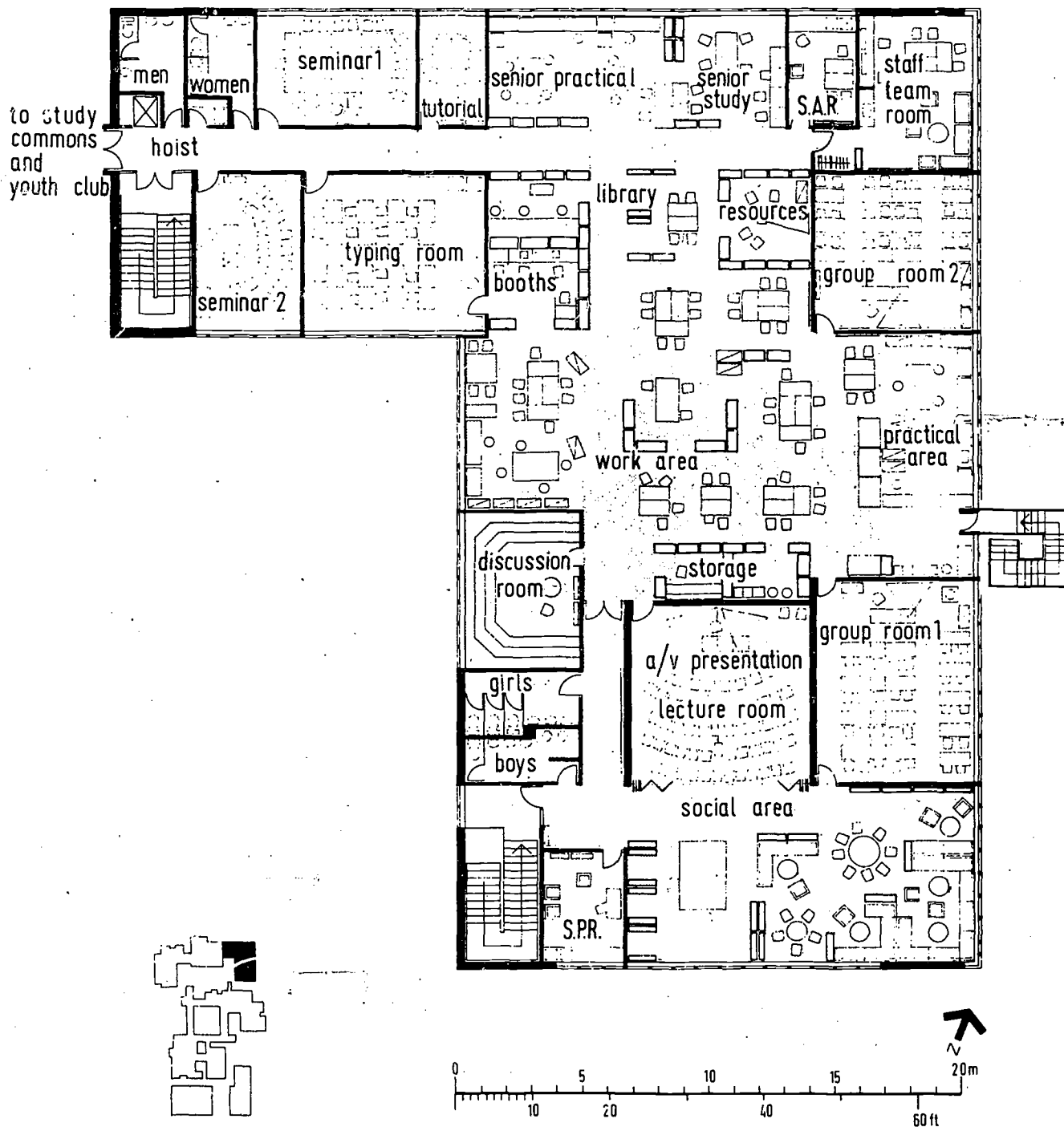


Figure 6 : Centre for Humanities

subsequent years (i.e. 13-18) will use this Centre for history, geography, religious studies and philosophy, economics and social science. This is one of the Centres providing for English, mathematics and commercial subjects. It is at first floor level, above the Centre for English and Languages (see Figure 7).

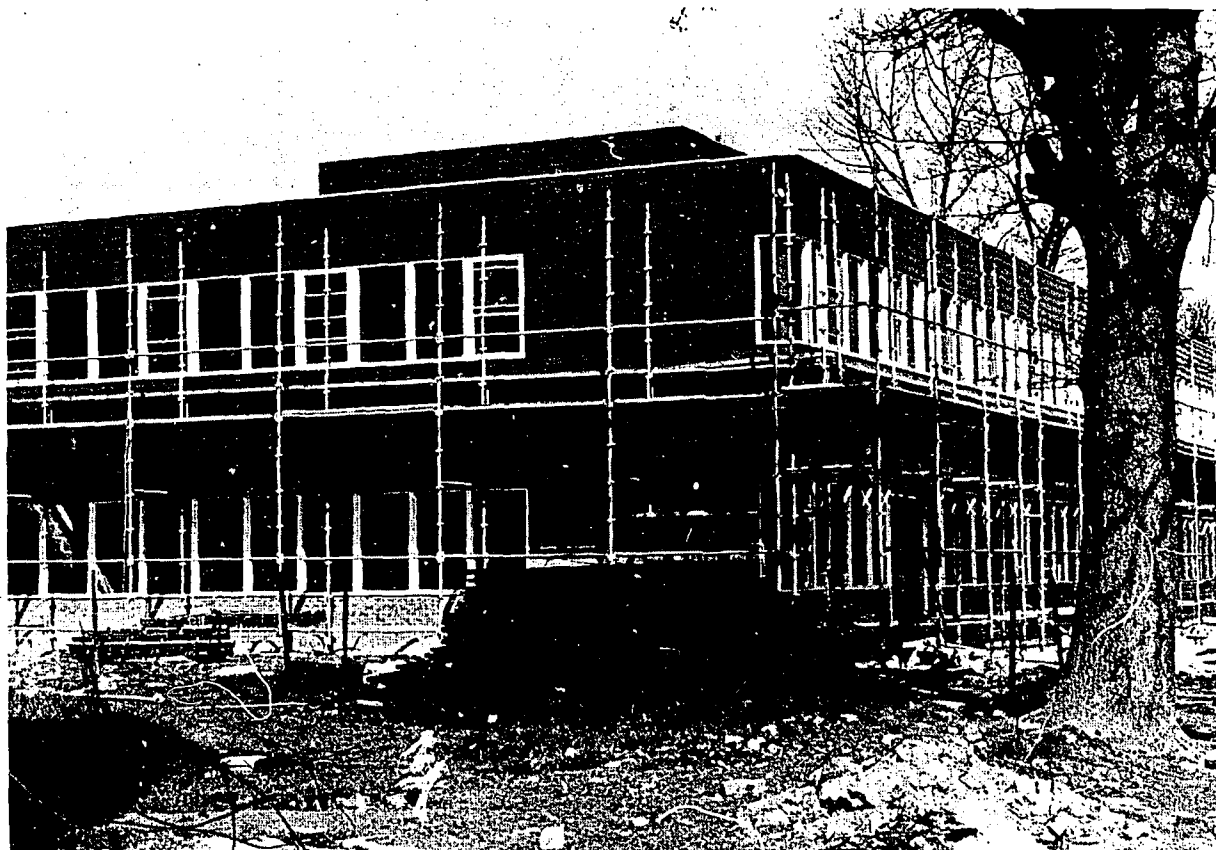


Figure 7 : School under Construction showing Centre
for Humanities at First Floor Level

All these subjects have certain common areas of study and are evolving towards inter-disciplinary work. They have many similarities in teaching approach, use of equipment, materials and accommodation requirements: there is thus a major opportunity for sharing resources. The Centre is designed to enable separate subjects to be studied at

the same time by a number of separately organised groups or larger groups led by several teachers to follow a common programme. For example, a group of 60 might begin by watching a film in the lecture/presentation room dispersing later into smaller groups for discussion, practical and project work, reference and writing. Older pupils might spend a considerable proportion of their time in tutorials, seminars, lectures and long-term projects. Pupils in the first two years will not usually need to use this Centre since the Lower School provides for comparable subjects.

In the general work space each subject could have its own local storage and display area. Practical work spaces are located so as to be accessible from either the general work area or enclosed rooms. In this Centre, practical work might include model making, preparation of maps and charts, drawing and painting, assembling three-dimensional displays and collections of materials such as facsimile evidence, photographs, newspaper cuttings and geological specimens. An area is set aside at the foot of the external stairs on the east side for messy practical work, and an erosion tank and weather station are also here.

The Centre has a total of 242 work places (occupied on average by 212 pupils) and a teaching area of about 900m². About 200 pupils in the third and fourth year, and 20 in the fifth to seventh years will be based here for pastoral purposes, and lockers for personal possessions are in the social area. There will be about 13 staff, of whom 11 are likely to be teaching at any one time. Rooms for senior teachers with special academic responsibilities (indicated by "SAR" on the plan) and pastoral responsibilities ("SPR") are shown.

ACKNOWLEDGEMENTS

All figures are by courtesy of the Department of Education and Science, Architects and Building Branch, London with the exception of Figure 3 which is reproduced from Education (the official organ of the Association of Education Committees) 31 March 1967 published by Councils & Education Press Ltd., 10 Queen Anne Street, London.

A Building Bulletin describing the Maiden Erlegh project in detail is to be published by the Department of Education and Science in 1973 and will be available from Her Majesty's Stationery Office, London.

P.E.B. INFORMATION LEAFLETS

Issued by the O.E.C.D. Programme on Educational Building (P.E.B.), the leaflets are an attempt to circulate up-to-date information on interesting examples of innovatory school building activity. It is hoped they will serve to stimulate those engaged in the provision of school building facilities in their search for new solutions to new problems. Leaflets available to date (English and French versions) are:

1. School Building Today and Tomorrow
2. Maiden Erlegh : an English Secondary School Development Project
3. C.R.O.C.S. : a Swiss Industrialised School Building System
4. f.f.5. : a Canadian "casework", or furniture and equipment system for schools.

To ensure that future leaflets are related as closely as possible to the interests and preoccupations of the readers, the Secretariat would welcome comments and suggestions for further topics. These, and also requests for additional copies of available leaflets, should be addressed directly to the P.E.B. Secretariat, or alternatively, if from a participating country, to the national representative or correspondent to the Programme.

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